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This listing of claims replaces all prior versions, and listings of claims in the instant application:

Listing of Claims:

1. - 66. (Cancelled)

67. (Cancelled)

68. (Cancelled)

69. (Original) ~~The apparatus of claim 68~~ An apparatus for dynamic implementation of a Java™ Metadata Interface (JMI) to a metamodel, the apparatus comprising:

means for receiving a JMI implementation request, said request associated with a metamodel, said metamodel comprising at least one package, said at least one package comprising at least one class, said at least one class comprising at least one attribute, reference or operation;

means for implementing a package proxy JMI interface when said request comprises a package proxy request wherein said means for implementing a package proxy JMI interface comprises:

means for generating bytecode for a class that implements said package proxy JMI interface wherein said means for generating further comprises:

means for receiving a metamodel package;

means for receiving a package proxy interface method associated with said metamodel package;

means for determining a class name based upon said interface method;

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means for searching said metamodel package for a class corresponding to said class name; and

means for producing an implementation of said interface method that returns a proxy for said class when said class name is found in said metamodel package;

means for creating a new instance of said class; and

means for returning said instance;

means for implementing a class proxy JMI interface when said request comprises a class proxy request; and

means for implementing a class instance JMI interface when said request comprises a class instance request.

70. (Previously Presented) The apparatus of claim 69 wherein said means for producing an implementation of said interface method calls a handler method of a superclass of said class, passing said class name as an argument and returning the proxy for said class.

71. (Currently Amended) The apparatus of claim ~~67~~ 69 wherein said means for implementing a class proxy JMI interface comprises:

means for generating bytecode for a class that implements said class proxy JMI interface;

means for creating a new instance of said class; and

means for returning said instance.

72. (Currently Amended) ~~The apparatus of claim 71~~ An apparatus for dynamic implementation of a Java™ Metadata Interface (JMI) to a metamodel, the apparatus comprising:

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means for receiving a JMI implementation request, said request associated with a metamodel, said metamodel comprising at least one package, said at least one package comprising at least one class, said at least one class comprising at least one attribute, reference or operation;

means for implementing a package proxy JMI interface when said request comprises a package proxy request;

means for implementing a class proxy JMI interface when said request comprises a class proxy request wherein said means for implementing a class proxy JMI interface comprises:

means for generating bytecode for a class that implements said class proxy JMI interface, wherein said means for generating further comprises:

means for receiving a metamodel class;

means for receiving a class proxy interface method associated with said metamodel class;

means for producing a first implementation of said interface method that creates a new instance of said class when said interface method is parameterless; and

means for producing a second implementation of said interface method that creates a new instance of said class and sets attributes passed as arguments to said interface method when said interface method includes at least one parameter;

means for creating a new instance of said class; and

means for returning said instance; and

means for implementing a class instance JMI interface when said request comprises a class instance request.

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73. (Previously Presented) The apparatus of claim 72 wherein said means for producing a first implementation calls a handler method of a superclass of said class, passing said class name as an argument and returning a new instance of said class.

74. (Previously Presented) The apparatus of claim 72 wherein said means for producing a second implementation calls a handler method of a_superclass of said class, passing said class name, said attributes, and attribute values as arguments and returning a new instance of said class.

75. (Currently Amended) The apparatus of claim ~~67~~ 69 wherein said means for implementing a class instance JMI interface comprises:

means for generating bytecode for a class that implements said class instance JMI interface;

means for creating a new instance of said class; and

means for returning said instance.

76. (Currently Amended) ~~The apparatus of claim 75~~ An apparatus for dynamic implementation of a Java™ Metadata Interface (JMI) to a metamodel, the apparatus comprising:

means for receiving a JMI implementation request, said request associated with a metamodel, said metamodel comprising at least one package, said at least one package comprising at least one class, said at least one class comprising at least one attribute, reference or operation;

means for implementing a package proxy JMI interface when said request comprises a package proxy request;

means for implementing a class proxy JMI interface when said request comprises a class proxy request; and

means for implementing a class instance JMI interface when said request comprises a class instance request

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wherein said means for implementing a class instance JMI interface comprises:

means for generating bytecode for a class that implements said class instance JMI interface, wherein said means for generating further comprises:

means for receiving a metamodel class;

means for receiving a class instance interface method associated with said metamodel class, said interface method having an interface method name;

means for producing a first implementation of said interface method that sets the value of an attribute when said interface method name includes a first prefix and when the attribute associated with said interface method is found in said metamodel class;

means for producing a second implementation of said interface method that sets the value of a reference when said interface method name includes a first prefix and when the reference associated with said interface method is found in said metamodel class;

means for producing a third implementation of said interface method that gets the value of an attribute when said interface method name includes a second prefix and when the attribute associated with said interface method is found in said metamodel class;

means for producing a fourth implementation of said interface method that gets the value of a reference when said interface method name includes a second prefix and when the reference associated with said interface method is found in said metamodel class; and

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means for producing a fifth implementation of said interface method that executes an operation when said interface method has the same name as said operation;

means for creating a new instance of said class; and

means for returning said instance.

77. (Original) The apparatus of claim 76 wherein
said first prefix is "set"; and
said second prefix is "get".

78. (Previously Presented) The apparatus of claim 76 wherein said means for producing a first implementation further comprises:

means for receiving an attribute name and an attribute value; and

means for producing an implementation that calls a handler method of a superclass of said class, passing said attribute name and said attribute value as arguments.

79. (Previously Presented) The apparatus of claim 76 wherein said means for producing a second implementation further comprises:

means for receiving a reference name and an reference value; and

means for producing an implementation that calls a handler method of a superclass of said class, passing said reference name and said reference value as arguments.

80. (Previously Presented) The apparatus of claim 76 wherein said means for producing a third implementation further comprises:

means for receiving an attribute name;

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means producing an implementation that calls a handler method of a superclass of said class, passing said attribute name as an argument and returning the attribute value associated with said attribute name; and

means for returning said attribute value.

81. (Previously Presented) The apparatus of claim 76 wherein said means for producing a fourth implementation further comprises:

means for receiving a reference name;

means producing an implementation that calls a handler method of a superclass of said class, passing said reference name as an argument and returning the reference value associated with said reference name; and

means for returning said reference value.

82. (Previously Presented) The apparatus of claim 76 wherein said means for producing a fifth implementation further comprises:

means for receiving an operation name and any associated arguments;

means for producing an implementation that calls a handler method of a superclass of said class, passing said operation name and said associated arguments as arguments and returning an operation return value; and

means for returning said operation return value.

83. (Cancelled)

84. (Cancelled)

85. (Cancelled)

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86. (Currently Amended) ~~The apparatus of Claim 85~~ An apparatus for dynamic implementation of a Java™ Metadata Interface (JMI), the apparatus comprising:

means for receiving a JMI implementation request, said request associated with a metamodel, said metamodel comprising at least one package, said at least one package comprising at least one class, said at least one class comprising at least one attribute, reference or operation;

means for implementing a JMI interface when said JMI interface is unimplemented wherein said means for implementing further comprises:

means for implementing a package proxy JMI interface when said request comprises a package proxy request and when said package proxy JMI interface is unimplemented wherein said means for implementing a package proxy JMI interface comprises:

means for generating bytecode for a class that implements said package proxy JMI interface wherein said means for generating further comprises:

means for receiving a metamodel package;

means for receiving a package proxy interface method associated with said metamodel package;

means for determining a class name based upon said interface method;

means for searching said metamodel package for a class corresponding to said class name; and

means for producing an implementation of said interface method that returns a proxy for said class when said class name is found in said metamodel package;

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means for creating a new instance of said class; and

means for returning said instance;

means for implementing a class proxy JMI interface when said request comprises a class proxy request and when said class proxy JMI interface is unimplemented; and

means for implementing a class instance JMI interface when said request comprises a class instance request and when said class instance JMI interface is unimplemented; and

means for executing a stored JMI interface implementation when said JMI interface is implemented, wherein said means for executing further comprises:

means for executing a stored a package proxy JMI interface implementation when said request comprises a package proxy request and when said package proxy JMI interface is implemented;

means for executing a stored class proxy JMI interface when said request comprises a class proxy request and when said class proxy JMI interface is implemented; and

means for executing a stored class instance JMI interface when said request comprises a class instance request and when said class instance JMI interface is implemented.

87. (Previously Presented) The apparatus of claim 86 wherein said means for producing an implementation of said interface method calls a handler method of a superclass of said class, passing said class name as an argument and returning the proxy for said class.

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88. (Currently Amended) The apparatus of claim ~~84~~ 86 wherein said means for implementing a class proxy JMI interface comprises:

means for generating bytecode for a class that implements said class proxy JMI interface;

means for creating a new instance of said class; and

means for returning said instance.

89. (Currently Amended) ~~The apparatus of claim 88~~ An apparatus for dynamic implementation of a Java™ Metadata Interface (JMI), the apparatus comprising:

means for receiving a JMI implementation request, said request associated with a metamodel, said metamodel comprising at least one package, said at least one package comprising at least one class, said at least one class comprising at least one attribute, reference or operation;

means for implementing a JMI interface when said JMI interface is unimplemented wherein said means for implementing further comprises:

means for implementing a package proxy JMI interface when said request comprises a package proxy request and when said package proxy JMI interface is unimplemented, wherein said means for implementing a class proxy JMI interface comprises:

means for generating bytecode for a class that implements said class proxy JMI interface wherein said means for generating further comprises:

means for receiving a metamodel class;

means for receiving a class proxy interface method associated with said metamodel class;

means for producing a first implementation of said interface method

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that creates a new instance of said class when said interface method is parameterless; and

means for producing a second implementation of said interface method that creates a new instance of said class and sets attributes passed as arguments to said interface method when said interface method includes at least one parameter;

means for creating a new instance of said class; and

means for returning said instance;

means for implementing a class proxy JMI interface when said request comprises a class proxy request and when said class proxy JMI interface is unimplemented; and

means for implementing a class instance JMI interface when said request comprises a class instance request and when said class instance JMI interface is unimplemented; and

means for executing a stored JMI interface implementation when said JMI interface is implemented said means for executing further comprises:

means for executing a stored a package proxy JMI interface implementation when said request comprises a package proxy request and when said package proxy JMI interface is implemented;

means for executing a stored class proxy JMI interface when said request comprises a class proxy request and when said class proxy JMI interface is implemented; and

means for executing a stored class instance JMI interface when said request comprises a class

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instance request and when said class instance JMI interface is implemented.

90. (Previously Presented) The apparatus of claim 89 wherein said means for producing a first implementation calls a handler method of a superclass of said class, passing said class name as an argument and returning a new instance of said class.

91. (Previously Presented) The apparatus of claim 89 wherein said means for producing a second implementation calls a handler method of a superclass of said class, passing said class name, said attributes, and attribute values as arguments and returning a new instance of said class.

92. (Currently Amended) The apparatus of claim ~~84~~ 86 wherein said means for implementing a class instance JMI interface comprises:

means for generating bytecode for a class that implements said class instance JMI interface;

means for creating a new instance of said class; and

means for returning said instance.

93. (Currently Amended) ~~The apparatus of claim 92~~ An apparatus for dynamic implementation of a Java™ Metadata Interface (JMI), the apparatus comprising:

means for receiving a JMI implementation request, said request associated with a metamodel, said metamodel comprising at least one package, said at least one package comprising at least one class, said at least one class comprising at least one attribute, reference or operation;

means for implementing a JMI interface when said JMI interface is unimplemented wherein said means for implementing further comprises:

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means for implementing a package proxy JMI interface when said request comprises a package proxy request and when said package proxy JMI interface is unimplemented;

means for implementing a class proxy JMI interface when said request comprises a class proxy request and when said class proxy JMI interface is unimplemented; and

means for implementing a class instance JMI interface when said request comprises a class instance request and when said class instance JMI interface is unimplemented, wherein said means for implementing a class instance JMI interface comprises:

means for generating bytecode for a class that implements said class instance JMI interface wherein said means for generating further comprises:

means for receiving a metamodel class;

means for receiving a class instance interface method associated with said metamodel class, said interface method having an interface method name;

means for producing a first implementation of said interface method that sets the value of an attribute when said interface method name includes a first prefix and when the attribute associated with said interface method is found in said metamodel class;

means for producing a second implementation of said interface method that sets the value of a reference when said interface method name includes a first

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prefix and when the reference associated with said interface method is found in said metamodel class;

means for producing a third implementation of said interface method that gets the value of an attribute when said interface method name includes a second prefix and when the attribute associated with said interface method is found in said metamodel class;

means for producing a fourth implementation of said interface method that gets the value of a reference when said interface method name includes a second prefix and when the reference associated with said interface method is found in said metamodel class; and

means for producing a fifth implementation of said interface method that executes an operation when said interface method has the same name as said operation;

means for creating a new instance of said class; and

means for returning said instance; and

means for executing a stored JMI interface implementation when said JMI interface is implemented wherein said means for executing further comprises:

means for executing a stored a package proxy JMI interface implementation when said request comprises a package proxy request and when said package proxy JMI interface is implemented;

means for executing a stored class proxy JMI interface when said request comprises a class proxy

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request and when said class proxy JMI interface is implemented; and

means for executing a stored class instance JMI interface when said request comprises a class instance request and when said class instance JMI interface is implemented.

94. (Original) The apparatus of claim 93 wherein
said first prefix is "set"; and
said second prefix is "get".

95. (Previously Presented) The apparatus of claim 93 wherein said means for producing a first implementation further comprises:

means for receiving an attribute name and an attribute value; and

means for producing an implementation that calls a handler method of a of said class, passing said attribute name and said attribute value as arguments.

96. (Previously Presented) The apparatus of claim 93 wherein said means for producing a second implementation further comprises:

means for receiving a reference name and an reference value; and

means for producing an implementation that calls a handler method of a superclass of said class, passing said reference name and said reference value as arguments.

97. (Previously Presented) The apparatus of claim 93 wherein said means for producing a third implementation further comprises:

means for receiving an attribute name;

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means for producing an implementation that calls a handler method of a superclass of said class, passing said attribute name as an argument and returning the attribute value associated with said attribute name; and

means for returning said attribute value.

98. (Previously Presented) The apparatus of claim 93 wherein said means for producing a fourth implementation further comprises:

means for receiving a reference name;

means for producing an implementation that calls a handler method of a superclass of said class, passing said reference name as an argument and returning the reference value associated with said reference name; and

means for returning said reference value.

99. (Previously Presented) The apparatus of claim 93 wherein said means for producing a fifth implementation further comprises:

means for receiving an operation name and any associated arguments;

means for producing an implementation that calls a handler method of a superclass of said class, passing said operation name and said associated arguments as arguments and returning an operation return value; and

means for returning said operation return value.

100. (Cancelled)

101. (Cancelled)

102. (Currently amended) ~~The apparatus of claim 101~~ An apparatus for dynamic implementation of a Java™ Metadata Interface (JMI) to a metamodel, the apparatus comprising:

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a requestor to make a JMI implementation request, said request associated with a metamodel, said metamodel comprising at least one package, said at least one package comprising at least one class, said at least one class comprising at least one attribute, reference or operation;

a package proxy implementor to implement a package proxy JMI interface when said request comprises a package proxy request wherein said package proxy implementor is further configured to:

generate bytecode for a class that implements said package proxy JMI interface;

create a new instance of said class;

return said instance;~~wherein said package proxy implementor is further configured to~~

receive a metamodel package;

receive a package proxy interface method associated with said metamodel package;

determine a class name based upon said interface method;

search said metamodel package for a class corresponding to said class name; and

produce an implementation of said interface method that returns a proxy for said class when said class name is found in said metamodel package;

a class proxy implementor to implement a class proxy JMI interface when said request comprises a class proxy request; and

a class instance implementor to implement a class instance JMI interface when said request comprises a class instance request.

103. (Previously Presented) The apparatus of claim 102 wherein said implementation of said interface method calls a handler method of a superclass of said class, passing said

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class name as an argument and returning the proxy for said class.

104. (Currently Amended) The apparatus of claim ~~100~~ 102 wherein said class proxy implementor is further configured to:

generate bytecode for a class that implements said class proxy JMI interface;

create a new instance of said class; and

return said instance.

105. (Currently Amended) ~~The apparatus of claim 104~~ An apparatus for dynamic implementation of a Java™ Metadata Interface (JMI) to a metamodel, the apparatus comprising:

a requestor to make a JMI implementation request, said request associated with a metamodel, said metamodel comprising at least one package, said at least one package comprising at least one class, said at least one class comprising at least one attribute, reference or operation;

a package proxy implementor to implement a package proxy JMI interface when said request comprises a package proxy request;

a class proxy implementor to implement a class proxy JMI interface when said request comprises a class proxy request wherein said class proxy implementor is further configured to:

generate bytecode for a class that implements said class proxy JMI interface;

create a new instance of said class;

return said instance;~~wherein said class proxy implementor is further configured to:~~

receive a metamodel class;

receive a class proxy interface method associated with said metamodel class;

produce a first implementation of said interface method that creates a new instance of said class when said interface method is parameterless; and

produce a second implementation of said interface method that creates a new instance of said class and sets the attributes passed as arguments to said interface method when said interface method includes at least one parameter; and

a class instance implementor to implement a class instance JMI interface when said request comprises a class instance request.

106. (Previously Presented) The apparatus of claim 105 wherein said first implementation calls a handler method of a superclass of said class, passing said class name as an argument and returning a new instance of said class.

107. (Previously Presented) The apparatus of claim 105 wherein said second implementation calls a handler method of a superclass of said class, passing said class name, said attributes, and attribute values as arguments and returning a new instance of said class.

108. (Currently Amended) The apparatus of claim 102 ~~100~~ wherein said class instance implementor is further configured to:

generate bytecode for a class that implements said class instance JMI interface;

create a new instance of said class; and

return said instance.

109. (Currently Amended) ~~The apparatus of claim 108~~ An apparatus for dynamic implementation of a Java™ Metadata Interface (JMI) to a metamodel, the apparatus comprising:

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a requestor to make a JMI implementation request, said request associated with a metamodel, said metamodel comprising at least one package, said at least one package comprising at least one class, said at least one class comprising at least one attribute, reference or operation;

a package proxy implementor to implement a package proxy JMI interface when said request comprises a package proxy request;

a class proxy implementor to implement a class proxy JMI interface when said request comprises a class proxy request; and

a class instance implementor to implement a class instance JMI interface when said request comprises a class instance request wherein said class instance implementor is further configured to:

generate bytecode for a class that implements said class instance JMI interface;

create a new instance of said class;

return said instance;~~wherein said class instance implementor is further configured to:~~

receive a metamodel class;

receive a class instance interface method associated with said metamodel class, said interface method having an interface method name;

produce a first implementation of said interface method that sets the value of an attribute when said interface method name includes a first prefix and when the attribute associated with said interface method is found in said metamodel class;

produce a second implementation of said interface method that sets the value of a reference when said interface method name includes a first prefix and when the reference associated with said interface method is found in said metamodel class;

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produce a third implementation of said interface method that gets the value of an attribute when said interface method name includes a second prefix and when the attribute associated with said interface method is found in said metamodel class;

produce a fourth implementation of said interface method that gets the value of a reference when said interface method name includes a second prefix and when the reference associated with said interface method is found in said metamodel class; and

produce a fifth implementation of said interface method that executes an operation when said interface method has the same name as said operation.

110. (Original) The apparatus of claim 109 wherein
said first prefix is "set"; and
said second prefix is "get".

111. (Cancelled)

112. (Cancelled)

113. (Cancelled)

114. (Currently Amended) ~~The apparatus of claim 113~~ An apparatus for dynamic implementation of a Java™ Metadata Interface (JMI), the apparatus comprising:

a requestor to make a JMI implementation request, said request associated with a metamodel, said metamodel comprising at least one package, said at least one package comprising at least one class, said at least one class comprising at least one attribute, reference or operation;

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an implementor to implement a JMI interface when said JMI interface is unimplemented wherein said implementor further comprises:

a package proxy implementor to implement a JMI interface when said request comprises a package proxy request and when said package proxy JMI interface is unimplemented wherein said package proxy implementor is further configured to:

generate bytecode for a class that implements said package proxy JMI interface;

create a new instance of said class;d

return said instance;~~wherein said package proxy implementor is further configured to:~~

receive a metamodel package;

receive a package proxy interface method associated with said metamodel package;

determine a class name based upon said interface method;

search said metamodel package for a class corresponding to said class name; and

produce an implementation of said interface method that returns a proxy for said class when said class name is found in said metamodel package;

a class proxy implementor to implement a JMI interface when said request comprises a class proxy request and when said class proxy JMI interface is unimplemented; and

a class instance implementor to implement a JMI interface when said request comprises a class instance request and when said class instance JMI interface is unimplemented; and

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an executor to execute a stored JMI interface implementation when said JMI interface is implemented wherein said executor is further configured to:

execute a stored a package proxy JMI interface implementation when said request comprises a package proxy request and when said package proxy JMI interface is implemented;

execute a stored class proxy JMI interface when said request comprises a class proxy request and when said class proxy JMI interface is implemented; and

execute a stored class instance JMI interface when said request comprises a class instance request and when said class instance JMI interface is implemented.

115. (Previously Presented) The apparatus of claim 114 wherein said implementation of said interface method calls a handler method of a superclass of said class, passing said class name as an argument and returning the proxy for said class.

116. (Currently Amended) The apparatus of claim 114 ~~112~~ wherein said class proxy implementor is further configured to:

generate bytecode for a class that implements said class proxy JMI interface;

create a new instance of said class; and

return said instance.

117. (Currently Amended) ~~The apparatus of claim 116~~An apparatus for dynamic implementation of a Java™ Metadata Interface (JMI), the apparatus comprising:

a requestor to make a JMI implementation request, said request associated with a metamodel, said metamodel comprising at least one package, said at least one package

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comprising at least one class, said at least one class comprising at least one attribute, reference or operation;

an implementor to implement a JMI interface when said JMI interface is unimplemented wherein said implementor further comprises:

a package proxy implementor to implement a JMI interface when said request comprises a package proxy request and when said package proxy JMI interface is unimplemented;

a class proxy implementor to implement a JMI interface when said request comprises a class proxy request and when said class proxy JMI interface is unimplemented wherein said class proxy implementor is further configured to:

generate bytecode for a class that implements said class proxy JMI interface;

create a new instance of said class;

return said instance;~~ wherein said class proxy implementor is further configured to:~~

receive a metamodel class;

receive a class proxy interface method associated with said metamodel class;

produce a first implementation of said interface method that creates a new instance of said class when said interface method is parameterless; and

produce a second implementation of said interface method that creates a new instance of said class and sets ~~the~~ attributes passed as arguments to said interface method when said interface method includes at least one parameter; and

a class instance implementor to implement a JMI interface when said request comprises a class

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instance request and when said class instance JMI interface is unimplemented; and

an executor to execute a stored JMI interface implementation when said JMI interface is implemented wherein said executor is further configured to:

execute a stored a package proxy JMI interface implementation when said request comprises a package proxy request and when said package proxy JMI interface is implemented;

execute a stored class proxy JMI interface when said request comprises a class proxy request and when said class proxy JMI interface is implemented; and

execute a stored class instance JMI interface when said request comprises a class instance request and when said class instance JMI interface is implemented.

118. (Previously Presented) The apparatus of claim 117 wherein said first implementation calls a handler method of a superclass of said class, passing said class name as an argument and returning a new instance of said class.

119. (Previously Presented) The apparatus of claim 117 wherein said second implementation calls a handler method of a superclass of said class, passing said class name, said attributes, and attribute values as arguments and returning a new instance of said class.

120. (Currently Amended) The apparatus of claim ~~112~~ 114 wherein said class instance implementor is further configured to:

generate bytecode for a class that implements said class instance JMI interface;

create a new instance of said class; and

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return said instance.

121. (Currently Amended) ~~The apparatus of claim 120~~ An apparatus for dynamic implementation of a Java™ Metadata Interface (JMI), the apparatus comprising:

a requestor to make a JMI implementation request, said request associated with a metamodel, said metamodel comprising at least one package, said at least one package comprising at least one class, said at least one class comprising at least one attribute, reference or operation;

an implementor to implement a JMI interface when said JMI interface is unimplemented wherein said implementor further comprises:

a package proxy implementor to implement a JMI interface when said request comprises a package proxy request and when said package proxy JMI interface is unimplemented;

a class proxy implementor to implement a JMI interface when said request comprises a class proxy request and when said class proxy JMI interface is unimplemented; and

a class instance implementor to implement a JMI interface when said request comprises a class instance request and when said class instance JMI interface is unimplemented wherein said class instance implementor is further configured to:

generate bytecode for a class that implements said class instance JMI interface;

create a new instance of said class; and

return said instance;~~wherein said class instance implementor is further configured to:~~

receive a metamodel class;

receive a class instance interface method associated with said metamodel class, said

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interface method having an interface method name;

produce a first implementation of said interface method that sets the value of an attribute when said interface method name includes a first prefix and when the attribute associated with said interface method is found in said metamodel class;

produce a second implementation of said interface method that sets the value of a reference when said interface method name includes a first prefix and when the reference associated with said interface method is found in said metamodel class;

produce a third implementation of said interface method that gets the value of an attribute when said interface method name includes a second prefix and when the attribute associated with said interface method is found in said metamodel class;

produce a fourth implementation of said interface method that gets the value of a reference when said interface method name includes a second prefix and when the reference associated with said interface method is found in said metamodel class; and

produce a fifth implementation of said interface method that executes an operation when said interface method has the same name as said operation; and

an executor to execute a stored JMI interface implementation when said JMI interface is implemented wherein said executor is further configured to:

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execute a stored a package proxy JMI interface implementation when said request comprises a package proxy request and when said package proxy JMI interface is implemented;

execute a stored class proxy JMI interface when said request comprises a class proxy request and when said class proxy JMI interface is implemented; and

execute a stored class instance JMI interface when said request comprises a class instance request and when said class instance JMI interface is implemented.

122. (Original) The apparatus of claim 121 wherein
said first prefix is "set"; and
said second prefix is "get".

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